

# SV-SFP28-ZRD

25Gbps 1300nm SM (LC) with DDM, distance up to 80km



## Features

- Up to 25.78Gb/s data links
- 1300nm DFB laser and PIN+SOA receiver
- Up to 80km on 9/125um SMF
- Hot-pluggable SFP footprint
- Support Digital Monitoring interface
- Class 1 laser safety certified
- Cost effective SFP28 solution, enables higher port densities and greater bandwidth
- RoHS-10 compliant and lead-free
- Single +3.3V power supply
- 2-wire interface for management specifications compliant with SFF-8472 digital diagnostic monitoring interface for optical transceivers
- All-metal housing for superior EMI performance
- Case operating temperature:  
 Commercial: 0 °C ~ +70 °C  
 Industrial: -40 °C ~ +85 °C

## Applications

- High-speed storage area networks
- 5GBASE 80KM
- Other Optical Links

## Ordering Information

Part number	Description	TX Power (dBm)	RX Sens. (dBm)	Fiber Budget (dB)	Distance (km)	DDM
<b>SV-SFP28-ZRD</b>	Starview SFP28 module supporting dual rate 10Gbps and 25Gbps 1300nm SM (LC) with Digital Diagnostic Monitoring (DDM), distance up to 80km.	1 to 6	-25.5 to -7	26.5	80	Yes
<b>SV-SFP28-ZRDH</b>	Starview SFP28 module supporting dual rate 10Gbps and 25Gbps 1300nm SM (LC) with Digital Diagnostic Monitoring (DDM), distance up to 80km. Industrial temperature range.	1 to 6	-25.5 to -7	26.5	80	Yes

## Absolute Maximum Ratings

Parameter	Symbol	Min	Max	Unit	Notes
Storage Temperature	T <sub>s</sub>	-40	85	°C	
Power Supply Voltage	V <sub>cc</sub>	-0.5	3.6	V	
Relative Humidity (non-condensation)	RH	5	95	%	
Damage Threshold	TH <sub>d</sub>	3		dBm	

## Recommended Operating Conditions

Parameter	Symbol	Min	Typical	Max	Unit	Notes
Operating Case Temperature	T <sub>OP</sub>	0		70	°C	commercial
		-40		85	°C	Industrial
Power Supply Voltage	V <sub>cc</sub>	3.135	3.3	3.465	V	
Data Rate			25.78		Gb/s	
Control Input Voltage High		2		V <sub>cc</sub>	V	
Control Input Voltage Low		0		0.8	V	
Link Distance (SMF)	D			80	km	9/125um

## Performance Specifications – Electrical

Parameter	Symbol	Min.	Typ.	Max	Unit	Notes
Power Consumption	p			3	W	
Supply Current	I <sub>cc</sub>			865	mA	
Transmitter						
Single-ended Input Voltage Tolerance	V <sub>cc</sub>	-0.3		4.0	V	
Common mode voltage tolerance		15			mV	
Differential Input Voltage Swing	V <sub>in,pp</sub>	180		700	mVpp	
Differential Input Impedance	Z <sub>in</sub>	90	100	110	Ohm	1

Transmit Disable Assert Time			100	us	
Transmit Disable Voltage	Vdis	Vcc-1.3	Vcc	V	
Transmit Enable Voltage	Ven	Vee	Vee +0.8	V	2
Receiver					
Single-ended Input Voltage Tolerance	Vcc	-0.3	4.0	V	
Differential Output Voltage Swing	Vout,pp	300	900	mVpp	
Differential Output Impedance	Zout	90	100	110	Ohm 3
Data output rise/fall time	Tr/Tf	12		ps	4
LOS Assert Voltage	VlosH	Vcc-1.3	Vcc	V	5
LOS De-assert Voltage	VlosL	Vee	Vee +0.8	V	5

Notes:

1. Connected directly to TX data input pins. AC coupled thereafter.
2. Or open circuit.
3. Input 100 ohms differential termination.
4. These are unfiltered 20-80% values.
5. Loss of Signal is LVTTTL. Logic 0 indicates normal operation; logic 1 indicates no signal detected.

## Optical Characteristics

Parameter	Symbol	Min.	Typical	Max	Unit	Notes
Transmitter						
Center Wavelength	$\lambda_C$	1299.02	1300.05	1301.09	nm	
Optical Spectral Width	$\Delta\lambda$			1	nm	
Average Optical Power	PAVG	1		6	dBm	1
Side Mode Suppression Ratio	SMSR	30			dB	
Optical Extinction Ratio	ER	6			dB	
Transmitter OFF Output Power	Poff			-30	dBm	
Optical Return Loss Tolerance	ORLT			20	dB	
Transmitter reflectance	Tref			-26	dB	
Transmitter Eye Mask	Compliant with IEEE802.3ae					
Receiver						

Center Wavelength	$\lambda_C$	1299.02	1300.05	1301.09	nm
Average Receive Power		-30		-7	dBm
Receiver Sensitivity (Average, each lane)	Sen			-25.5	dBm 2
Input Saturation Power (overload)	Psat	-7			dBm
LOS Assert	LOSA	-40			dBm
LOS De-assert	LOSD			-29	dBm
Damage Threshold	TH <sub>d</sub>	-3			dBm
LOS Hysteresis	LOSH	0.5			dB

## Notes:

1. Class 1 Laser Safety per FDA/CDRH and IEC-825-1 regulations.
2. Measured @25.78125Gbps, ER=6.2dB, BER=<5E-5, PRBS=2<sup>31</sup>-1